COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
Valley Regional Office

STATEMENT OF LEGAL AND FACTUAL BASIS

O'Sullivan Films, Inc.
Winchester, Virginia
Permit No. VRO80333

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, O'Sullivan Films, Inc., has applied for a renewal of its Title V Operating Permit for its Winchester engineered film calendering, coating, and printing facility. The Department has reviewed the application and has prepared a draft Title V Operating Permit.

Engineer/Permit Contact:_____ Date:_*6/20/06*_____

Air Permit Manager:_____ Date:_____

Deputy Regional Director:_____ Date:_____

FACILITY INFORMATION

Permittee
O'Sullivan Films, Inc.
1944 Valley Avenue
Winchester, Virginia 22601-2711

Facility
O'Sullivan Films, Inc.
1944 Valley Avenue
Winchester, Virginia 22601-2711

Plant ID No. 51-840-0060

SOURCE DESCRIPTION

NAICS Code 326113 (formerly SIC Code 3081) – Unsupported plastics film and sheet (except packaging) manufacturing
326130 (formerly SIC Code 3083) – Laminated plastics plate, sheet, and shape manufacturing

O'Sullivan Films, Inc. (O'Sullivan) (formerly PolyOne Engineered Films, Inc.) operates a performance polymer and engineered film calendering, coating, and printing facility in Frederick County. The plant has three calenders that produce flexible sheet vinyl plastics. The plastic sheets are painted on one of three spray paint lines, printed on a rotogravure printing press, or laminated on one of four laminators according to customer requirements. The finished products are used for automotive, medical, industrial, and recreational purposes.

The facility is a Title V major source of volatile organic compounds (VOC) and hazardous air pollutants (HAPs). The source is located in an area (City of Winchester) designated as marginally nonattainment for ozone (Winchester has entered an Early Action Compact (EAC) to stay some nonattainment requirements). O'Sullivan is a major source under the Prevention of Significant Deterioration (PSD) program and operates under minor New Source Review permits dated December 22, 2004 and April 21, 2005. O'Sullivan's initial Title V permit was issued May 22, 2001 and expires May 22, 2006.

COMPLIANCE STATUS

A full compliance evaluation of this facility, including a site visit, was most recently conducted in August of 2004. In addition, all reports and other data required by permit conditions or regulations, which are submitted to DEQ, are evaluated for compliance. Performance testing conducted according to the 12/22/04 permit for Calender 2 indicated that hourly emissions of

volatile organic compounds (VOC) and particulate matter (PM) from Calender 2 exceeded the emissions limits. O'Sullivan has since signed a Consent Order (dated January 10, 2006) with DEQ that includes steps to be taken to return to a compliant status. The Title V renewal permit includes a compliance plan (Section XII) at least as stringent as the terms of the Consent Order.

The facility has not been found to be in violation of any other state or federal applicable requirements at this time.

CHANGES SINCE INITIAL PERMIT

During the five-year term of O'Sullivan's Title V permit, the following changes were made to equipment at the facility and to the draft renewed Title V permit:

- *RTO destruction efficiency:* The required destruction efficiency for the regenerative thermal oxidizer (RTO) serving Paint Line 4 was decreased from 99.0% to 98.6%. To offset a potential increase in emissions, a limit on operating hours for Paint Line 4 was established. Both changes were previously made to O'Sullivan's minor NSR permit (dated October 20, 2003, now dated April 21, 2005) and are being incorporated into the Title V permit in this permit renewal.

- *Routing of Paint Kitchen emissions:* O'Sullivan's minor NSR permit was amended April 21, 2005, to allow routing of emissions from the Paint Kitchen to either RTO, rather than to only RTO1.

- *Laminator 1:* Laminator 1 was removed from the Title V Insignificant Activities list. The unit was modified and included in O'Sullivan's minor NSR permit modification effective March 19, 2004. The Title V renewal permit includes the new applicable requirements for the laminator from the minor NSR permit (now dated April 21, 2005).

- *Post Embosser:* The Post Embosser has been removed from the Title V Insignificant Activities list. Changes were made to the unit in 2002 that were evaluated under minor NSR permitting and found to be exempt. Nonetheless, uncontrolled emissions from the unit now exceed the criteria for insignificant activities under Title V. Additionally, the unit is subject to the Paper and Other Web Coating (POWC) MACT (40 CFR 63 Subpart JJJJ) and therefore cannot be considered an insignificant unit.

- *Paint Line 1 removal:* Paint Line 1 has been removed from the permit. The unit has been permanently shutdown and removed from the facility's minor NSR permit.

- *Removal of toxics conditions:* Conditions based on Virginia's Toxics Rule have been removed. Since promulgation of the Paper and Other Web Coating MACT (40 CFR 63 Subpart JJJJ), the Toxics Rule no longer applies to the paint lines and laminators. Emission limits based on the Rule were previously removed from the minor NSR permit.

- *Calender 2:* Calender 2 was modified in 2004, and new applicable requirements for Calender 2, as established in the minor NSR permit dated December 22, 2004, have been incorporated into the Title V renewal permit.

- *Paper and Other Web Coating MACT:* Requirements from the National Emissions Standards for Hazardous Air Pollutants from Paper and Other Web Coating (POWC MACT) (40 CFR 63 Subpart JJJJ) have been established in the Title V renewal permit.

- *Organic Liquids Distribution MACT:* Certain notification requirements from the National Emissions Standards for Hazardous Air Pollutants from Organic Liquids Distribution (OLD MACT) (40 CFR 63 Subpart EEEE) have been established in the Title V renewal permit.

- *CTG RACT:* Requirements from 9 VAC 5 Chapter 40, which establishes Control Technique Guidelines for Reasonably Available Control Technology (RACT) standards for specific industrial processes, have been included in the Title V renewal permit. O'Sullivan is now subject to certain Chapter 40 standards because it is located within the Western Virginia VOC Control Area (which includes City of Winchester).

- *Consent order provisions:* The Title V renewal permit includes a compliance plan (Section XII) that is at least as stringent as the requirements from Appendix A of the January 10, 2006 consent order between DEQ and O'Sullivan.

- *General conditions:* The "General Conditions" section of the Title V permit has been updated to reflect changes made to the Title V boilerplate since O'Sullivan's permit was issued.

- *Minor NSR permit condition numbers:* The minor NSR permit dates and condition numbers noted in the Title V condition citation for each applicable requirement have been updated to reflect the current minor NSR permits.

- *Emission unit ID numbers – Painting Operations:* The emission unit ID numbers for the paint lines, Paint Kitchen, and Paint Lab have been changed to be consistent with those in the minor NSR permit.

- *Confidential business information:* O'Sullivan's renewal application included refined values for capacities for many equipment pieces and a claim of confidentiality status for the new values. O'Sullivan included a showing justifying the confidential status of the information and such information has been removed from the Emission Units table (Section II) of the renewal permit and from the statement of basis.

The renewed Title V permit also includes a Compliance Assurance Monitoring (CAM) Plan for the RTO serving Paint Lines 2 and 3 and Laminator 3 (RTO1). Also, the Inapplicable

Requirements section of the permit has been expanded to include some federal regulations that have been promulgated since issuance of the original permit.

EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

Equipment to be operated at the facility consists of:

Emission Unit ID	Stack ID	Emission Unit Description	*Size/Rated Capacity	Pollution Control Device Description (PCD)	PCD ID	Pollutant Controlled	Applicable Permit Date
Fuel Burning Equipment							
BLR1	1	Peabody Engineering/E. Keeler Co. Nat. Gas/No. 2 Oil fired Industrial Boiler, installed 1951 (coal to NG/No. 2 oil firing conversion - 1968)	36 MMBtu/hr	-	-	-	-
BLR2	2	Cleaver Brooks, Nat. Gas/No. 2 Oil fired Industrial Boiler, installed 1972	16 MMBtu/hr	-	-	-	-
PH1	3	American Hydrotherm Calender No. 3 1966 Hot Oil Generator, installed 1988	16.8 MMBtu/hr	-	-	-	April 21, 2005
Painting Operations							
PK	4 or 5	Paint kitchen	-	Smith Engineering Company regenerative thermal oxidizer (RTO)	CNTRL1 or CNTRL2	VOC, VHAP	April 21, 2005
PLAB	49-51	Paint testing laboratory	-				April 21, 2005

Emission Unit ID	Stack ID	Emission Unit Description	*Size/Rated Capacity	Pollution Control Device Description (PCD)	PCD ID	Pollutant Controlled	Applicable Permit Date
PL2	4	Paint Line comprised of spray booths 1 & 2 (airless air assisted spider-arm applicator on continuous vinyl web), gravure station, flash-off zones and drying ovens (Nordson)	-	Smith Engineering Company regenerative thermal oxidizer (RTO)	CNTRL1	VOC, VHAP	April 21, 2005
PL3	4	Paint Line comprised of spray booths 1 & 2 (airless air assisted spider-arm applicator on continuous vinyl web), flash-off zones, and drying ovens	-	Smith Engineering Company regenerative thermal oxidizer (RTO)	CNTRL1	VOC, VHAP	April 21, 2005
PL4	5	Paint Line comprised of spray booths 1 & 2 (airless air assisted spider-arm applicator on continuous vinyl web), flash-off zones, and drying ovens	~5000 linear ft vinyl /hr	Smith Engineering Company regenerative thermal oxidizer (RTO)	CNTRL2	VOC, VHAP	April 21, 2005
Laminating Operations							
LAM1	49	Lembo Laminator (including embossing and adhesive material mixing) (water-based low-VOC adhesives and primer applied by roller)	-	-	-	-	April 21, 2005
LAM2	7 - 10	Laminator (including embossing and adhesive material mixing) (water-based low-VOC adhesives and primer applied by roller)	15 m vinyl/min	-	-	-	-
LAM3	4	Kawakami Laminator (including adhesive material mixing) (solvent-based adhesives applied by doctor blade and/or roller with capabilities for using water-based low-VOC adhesives and primer)	20 m vinyl/min	Smith Engineering Company regenerative thermal oxidizer (RTO)	CNTRL1	VOC, VHAP	April 21, 2005

Emission Unit ID	Stack ID	Emission Unit Description	*Size/Rated Capacity	Pollution Control Device Description (PCD)	PCD ID	Pollutant Controlled	Applicable Permit Date
LAM4	12	Inta-Rota Laminator (including adhesive material mixing) (solvent-based adhesives applied by roller with capabilities for using water-based low-VOC adhesives and primer)	20 m vinyl/min	-	-	-	April 21, 2005
Rotogravure Printing Operations							
PNTKTN2		Paint kitchen for Lembo (printing ink mixing)	-	-	-	VOC, VHAP	-
LEMB	16 - 19	Lembo 4-Station Rotogravure Printing Press (vinyl substrate) with drying ovens	-	-	-	-	-
Calendering Operations							
CAL1	20	Farrel Calender	≥ 100 pounds/hr	-	-	-	-
CALMIX1a	N/A	Pre-blender for Calender 1 (raw material mixing equipment)	≥ 100 pounds/hr	Osprey baghouse (vents indoors)	CNTRL3	PM, PM-10	-
CALMIX1b	N/A	Banbury mixer for Calender 1 (raw material mixing equipment)	≥ 100 pounds/hr	Farr baghouse (vents indoors)	CNTRL4	PM, PM-10	-
CAL2	21 - 22	Nippon Roll Calender	≥ 100 pounds/hr	-	-	-	December 22, 2004
CALMIX2a	N/A	Banbury mixer for Calender 2 (raw materials mixing)	≥ 100 pounds/hr	Osprey fabric filter (2 units) (vents indoors)	CNTRL 12	PM, PM-10	December 22, 2004
CALMIX2b1	N/A	Pre-blender for Calender 2 (raw material mixing equipment)	≥ 100 pounds/hr	Osprey fabric filter (vents indoors)	CNTRL6	PM, PM-10	December 22, 2004
CALMIX2b2	N/A	Pre-blender for Calender 2 (raw material mixing equipment)	≥ 100 pounds/hr	Osprey fabric filter (vents indoors)	CNTRL7	PM, PM-10	December 22, 2004

Emission Unit ID	Stack ID	Emission Unit Description	*Size/Rated Capacity	Pollution Control Device Description (PCD)	PCD ID	Pollutant Controlled	Applicable Permit Date
CAL3	24	Kraffanlagen Heidelberg Calender	≥ 100 pounds/hr	-	-	-	-
CALMIX3a	N/A	Pre-blender for Calender 3 (raw material mixing equipment)	≥ 100 pounds/hr	Osprey baghouse (3 units) (vents indoors)	CNTRL8	PM, PM-10	-
CALMIX3b	N/A	Banbury mixer for Calender 3 (raw material mixing equipment)	≥ 100 pounds/hr	Osprey baghouse (vents indoors)	CNTRL9	PM, PM-10	-
CALMIX3c	N/A	Banbury mixer for Calender 3 (raw material mixing equipment)	~10,000 lb/hr	Osprey baghouse (vents indoors)	CNTRL10	PM, PM-10	-
Post Embossing Operations							
PEMB	50-51	Post Embosser (includes embosser and optional water-based adhesive back coater and slitter)	-	-	-	VOC, HAPs	-
Materials Handling Operations							
RES-CONV1	25 - 40	Bulk resin transfer and storage (pneumatic) for Calenders 1 & 2 (includes rail car and tank truck unloading to bulk silos and transfer from bulk silos to day bins and mixing stations)	~10 tons/hr	Flex-Kleen baghouse (Stacks 25 - 39); Pacific Engineering Company baghouse (Stack 40)	CNTRL12 - CNTRL26	PM, PM-10	-
RES-CONV2	41 - 48	Bulk resin transfer and storage (pneumatic) for Calender 3 (includes rail car and tank truck unloading to bulk silos and transfer from bulk silos to day bins and mixing stations)	~10 tons/hr	Pacific Engineering Company baghouse	CNTRL27 - CNTRL35	PM, PM-10	-
Storage Tanks							

Emission Unit ID	Stack ID	Emission Unit Description	*Size/Rated Capacity	Pollution Control Device Description (PCD)	PCD ID	Pollutant Controlled	Applicable Permit Date
TNK-P21	N/A	Bulk storage tank for plasticizer	15,000 gal	-	-	-	-
TNK-P22	N/A	Bulk storage tank for plasticizer	15,000 gal	-	-	-	-
TNK-P23	N/A	Bulk storage tank for plasticizer	15,000 gal	-	-	-	-
TNK-P24	N/A	Bulk storage tank for plasticizer	15,000 gal	-	-	-	-
TNK-P25	N/A	Bulk storage tank for plasticizer	15,000 gal	-	-	-	-
TNK-P26	N/A	Bulk storage tank for plasticizer	15,000 gal	-	-	-	-
TNK-TC21	N/A	Bulk storage tank for topcoat	15,000 gal	-	-	-	-
TNK-TC22	N/A	Bulk storage tank for topcoat	15,000 gal	-	-	-	-
TNK-TC23	N/A	Bulk storage tank for topcoat	15,000 gal	-	-	-	-
TNK-TC24	N/A	Bulk storage tank for topcoat	15,000 gal	-	-	-	-
TNK-TC25	N/A	Bulk storage tank for topcoat	15,000 gal	-	-	-	-
TNK-TC26	N/A	Bulk storage tank for topcoat	15,000 gal	-	-	-	-

*The Size/Rated capacity is provided for informational purposes only, and is not an applicable requirement.

EMISSIONS INVENTORY

A copy of the 2004 annual emission update is attached as Attachment A. Emissions are summarized in the following tables.

2004 Actual Emissions

	Criteria Pollutant Emission in Tons/Year				
Emission Unit	**VOC**	**CO**	**SO_2**	**PM_{10}**	**NO_x**
Boiler 1	0.03	0.36	1.61	0.05	0.72
Boiler 2	0.08	1.46	9.57	0.38	4.17
Process heater (hot oil generator)	0.01	0.33	1.76	0.08	0.85
Various natural gas heaters	0.14	2.07	0.01	0.05	2.47
Calender 1	3.22	-	-	0.44	-
Calender 2	3.87	-	-	0.80	-
Calender 3	3.87	-	-	0.52	-
Laminator 1	0.04	-	-	-	-
Laminator 2	0.54	-	-	-	-
Laminator 4	10.18	-	-	-	-
Miscellaneous evaporated solvents (paint lines 2 & 3)	129.81	-	-	-	-
Paint Line 4	11.13	-	-	-	-
RTO fuel combustion	0.09	1.46	8.95	0.28	3.21
Paint line ovens (fuel combustion)	0.11	1.73	0.01	0.04	2.06
Total	**163.12**	**7.41**	**21.91**	**2.64**	**13.48**

FUEL BURNING EQUIPMENT REQUIREMENTS - Emission Units BLR1, BLR2, and PH1

Limitations

O'Sullivan has three fuel-burning units: two boilers rated at 36 MMBtu/hr and 16 MMBtu/hr and a hot oil generator rated at 16.8 MMBtu/hr. The boilers provide steam for process operations

and for heating buildings. The hot oil generator is used on Calender 3. All three units primarily fire natural gas and use No. 2 oil as a backup fuel.

The following limitations are State BACT requirements for the hot oil generator (PH1) from the Minor NSR Permit issued April 21, 2005. Please note that the condition numbers are from the Minor NSR permit, a copy of which is attached (Attachment B).

Condition 18, limiting allowable fuels to natural gas and distillate oil;

Condition 23, limiting emissions from the hot oil generator;

Condition 25, limiting visible emissions from the hot oil generator to 10%.

The boilers are subject to general fuel-burning equipment limitations based on the rules for existing sources (9 VAC 5 Chapter 40). The boilers are not covered under a NSR permit because they were constructed prior to applicable permitting dates.

The following Virginia Administrative Codes that have specific emission requirements have been determined to be applicable to the boilers:

9 VAC 5-40-900: Particulate matter emissions are limited as determined using the equation E = 0.39H, where E is the emission limit in lbs/hr and H is the actual heat input in MMBTU/hr.

9 VAC 5-40-930: Sulfur dioxide emissions from fuel burning equipment installations are limited as determined by the equation S = 2.64K, where S is the emission limit in lbs/hr and K is the total heat input capacity in MMBTU/hr. The limit is 137 lbs/hr based on the combined rated heat input of 52 MMBTU/hr for BLR1 and BLR2.

9 VAC 5-40-940: Visible emissions from existing fuel burning equipment are restricted to twenty percent (20%) opacity except during one six-minute period in any one hour in which visible emissions shall not exceed sixty percent (60%) opacity.

VAC 5-20-180: Boiler operators shall be adequately trained to properly operate the equipment. This training shall be recorded and made available for inspection.

A condition is included in the Title V permit to limit fuels used in the boilers to natural gas and No. 2 oil. The permit also limits the sulfur content of the fuel to 0.5%. The limit codifies the facility's current practice and prevents further monitoring requirements that would be necessary if residual oil was used.

The boilers and process heater are affected sources under the Boiler MACT (40 CFR 63 Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters). However, based on the rated capacities of the

units and the fact that they burn only gaseous and liquid fuels, there are no requirements from the MACT that apply to the units, except the Initial Notification Requirement (40 CFR 63.7545). In a letter dated March 7, 2005, O'Sullivan provided the initial notification for both boilers and the process heater regarding the Boiler MACT. A condition has been added to the Title V renewal permit that indicates that the units are subject to the regulation. However, there are no requirements (other than initial notification, already fulfilled) that apply to the units.

Monitoring and Recordkeeping

Opacity has been chosen as a surrogate indicator for particulate matter emissions. During periods in which distillate oil is used in BLR1, BLR2, or PH1, O'Sullivan will perform weekly inspections of the boiler or generator stack(s) to determine the presence of visible emissions. If during the inspection visible emissions are observed, an EPA Method 9 (40 CFR Part 60, Appendix A) visible emission evaluation (VEE) will be conducted for a minimum of six minutes. If any of the observations exceed the applicable opacity limit, the observation period shall continue until a total of 60 minutes of observation have been completed.

At maximum boiler capacity, the particulate matter emission limit for both combustion units combined is 20.3 lbs/hr, according to 9 VAC 5-40-900 B. Potential particulate emissions (filterable and condensable) from the operation of both boilers combined (based on use of No. 2 oil) using AP-42 emission factors is shown in the following table.

Table 1. Potential particulate emissions from combustion units

Fuel Type	Capacity of Fuel Burning Equipment	Maximum Hourly Throughput	AP-42 Emission Factor for PM (lb/1000 gal)	Maximum Emissions of PM (lbs/hr)	Calculated PM Emission Standard (lbs/hr)
No. 2 Fuel Oil	52 MMBtu/hr	0.3768 mgal/hr	3.3	1.24	20.3

The maximum expected particulate emissions using AP-42 emissions factor is far below the allowable limit. Therefore, there is reasonable assurance that the particulate matter emission limit will not be violated as long as the opacity limit is not exceeded. Boiler inspection reports have revealed no past violations of the opacity limitations contained in this permit.

The allowable sulfur dioxide emission limit for the boilers combined equals 137 lbs/hr. The AP-42 emission factor for sulfur dioxide assumes that all of the sulfur is converted to sulfur dioxide. Potential sulfur dioxide emissions from the boilers (based on use of No. 2 oil) are included in the following table.

Table 2. Potential sulfur dioxide emissions from combustion units

Fuel Type	Capacity of Fuel Burning Equipment	Maximum Hourly Throughput	AP-42 Emission Factor for Sulfur Dioxide (lb/1000 gal)	Maximum Sulfur Content (S)	Maximum Emissions of Sulfur Dioxide (lbs/hr)	Sulfur Dioxide Emission Standard (lbs/hr)
No. 2 Fuel Oil	52 MMBtu/hr	0.3768 mgal/hr	142 S	0.5	26.8	137

Since the AP-42 emission factor assumes that all of the sulfur in the fuel is converted to sulfur dioxide, the sulfur dioxide emission limit cannot be exceeded as long as the sulfur content of the fuel does not exceed 0.5%. The permit sets the maximum allowable sulfur content at 0.5%. The permittee is required to obtain a certification from the fuel supplier with each shipment of distillate oil, showing the sulfur content (in percent) of the oil. The permittee is required to retain the fuel certifications. If only distillate oil is used, the SO_2 limit will not be violated. Accordingly, keeping records of the type of fuel purchased and its sulfur content meets the periodic monitoring requirement for SO_2 emissions.

The permittee is required to records of annual throughput of fuel, weekly visible emission inspections, any performed VEEs, boiler/generator operator training and boiler/generator maintenance.

Testing

A table of test methods is included in the permit for use if testing is conducted in addition to the monitoring required. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

PAINTING OPERATION REQUIREMENTS – Emission Unit IDs PK, PLAB, PL2 – PL4

Limitations

The following VOC limitations are State BACT requirements from the Minor NSR Permit issued April 21, 2005, for the PK (Paint Kitchen), PLAB (Paint Lab), and PL2 – PL4 (Paint Lines 2 – 4). Please note that the condition numbers are from the Minor NSR permit, a copy of which is attached (Attachment B).

> Condition 5, requiring that VOC emissions from PL2 & PL3 be controlled by an 80% efficient capture system and a regenerative thermal oxidizer (RTO) and that the RTO shall be provided with adequate access for inspection;

Condition 6, requiring that VOC emissions from PL4 be controlled by permanent total enclosure and an RTO and that the RTO shall be provided with adequate access for inspection;

Condition 7, requiring that VOC emissions from PK be controlled by permanent total enclosure and an RTO having at least 95% destruction efficiency and that the RTO shall be provided with adequate access for inspection;

Condition 8, requiring that the RTO serving PL2 & PL3 achieve a 95% destruction efficiency;

Condition 9, requiring that the RTO serving PL4 achieve a 98.6% destruction efficiency;

Condition 10, listing the criteria for total enclosure;

Condition 11, specifying a minimum combustion zone temperature and residence time for the RTO controlling PL2 & PL3;

Condition 12, specifying a minimum combustion zone temperature and residence time for the RTO controlling PL4;

Condition 17, limiting PL4 operating hours to 7,140 per year, calculated monthly as the sum of each consecutive 12-month period;

Condition 19, authorizing use of natural gas and No. 2 fuel oil as auxiliary fuels for the RTOs;

Condition 24, limiting annual VOC emissions from the paint lines and kitchen;

Condition 26, limiting visible emissions from each RTO to 5% opacity.

The following requirement, related to Compliance Assurance Monitoring (CAM) (40 CFR 64), establishes a threshold at which O'Sullivan is required to develop a Quality Improvement Plan for its RTOs:

For Paint Lines 2, 3, and 4 (PL2 - PL4), the permittee shall develop a Quality Improvement Plan (QIP) according to 40 CFR 64.8 if more than six excursions from the indicator range specified in the applicable Compliance Assurance Monitoring (CAM) Plan (Attachment A or Attachment B to permit) occur within a semi-annual period. An excursion shall be defined as any three-hour period of operation during which the average combustion zone temperature is outside of the indicator range specified in the CAM Plan. Semi-annual periods are as indicated by reporting requirements in Condition XV.C.3.

Monitoring

The monitoring requirements for the painting operations (PL2 – PL4, PK, and PLAB) in the 4/21/05 Minor NSR permit have been modified to meet Part 70 requirements.

The permit requires O'Sullivan to continuously measure and record the combustion zone temperature in each RTO. There are no monitoring requirements related to retention times (specified in Conditions 11 and 12 of the 4/21/05 Minor NSR permit) because the required RTO retention time is a design parameter and represents the retention at maximum flow rate (the minimum retention time).

For each paint line, the paint kitchen and paint lab, the permittee will monitor and record on a monthly basis coating usage, VOC content of the coating, and the number of hours of operation. Using these data, the permittee will calculate monthly and annual VOC throughput and emissions to demonstrate compliance with emission limitations. The permit requires that annual emissions calculations be based on the following formula (derived from Condition 15 of the 4/21/05 Minor NSR permit):

$$V_{EM} = (V_{TPUT} - V_{REC} - V_{RET}) \times (1 - OCE)$$

Where

V_{EM}	=	Annual emissions of VOCs in tons.
V_{TPUT}	=	Annual throughput of VOCs in tons.
V_{REC}	=	Annual amount of VOCs recovered or disposed of off-site in tons.
V_{RET}	=	Annual amount of VOCs retained in the products in tons
OCE	=	overall control efficiency (the product of capture efficiency and control device destruction efficiency), as a mass fraction

The value for VOCs retained in product used in emission calculations must be approved by the Director, Valley Regional Office. Capture efficiencies and control device destruction efficiencies to be used are that indicated by the most recent performance testing.

For the purposes of calculating VOC emissions, the permit requires a tiered approach to determining VOC content in coating. For the past several years, O'Sullivan has operated at levels well below (at less than 50% of) its emission limits. Because of the large margin of compliance, the permit allows the VOC content of coating as supplied used in emission calculations to be based on manufacturer formulation data as shown on the Material Safety Data Sheet (MSDS) for each product. If a range of VOC content values is given, calculations shall be based on the maximum value. However, once the monthly calculation of actual emissions indicates emissions at 75% or more of the allowable annual emissions, quarterly testing of each product formulation is required. The testing shall be determined, by either the permittee or supplier, using EPA Reference Method 24 (40 CFR 60, Appendix A). Each coating shipment must be identified by a product formulation number that may be correlated to Reference Method 24 results. Emission calculations must be based on the most recent test results for each

formulation. The quarterly tests may be discontinued after actual annual emissions are below 75% of the allowable levels for three consecutive months. If quarterly testing is discontinued, the permit requires that the VOC content determined in the latest test for each formulation be used in lieu of MSDS information.

In O'Sullivan's case, the likelihood of emission violations from the paint lines is very low. For several years, O'Sullivan has operated well below (at less than 50% of) its allowable limits. The paint lines are controlled by RTOs that are subject to extensive parametric monitoring requirements. Periodic stack testing of the RTOs is also required by the facility's CAM Plans (see discussion below). Emissions vary little due to use of controls and of coatings having similar VOC content. It is not economically reasonable to perform reference method testing on the coatings if actual emissions are below 75% of allowable emissions. The likelihood of an emissions violation when actual emissions are below the 75% threshold is low given the other monitoring requirements imposed in the permit. The required monitoring of RTO parameters, periodic stack testing, VOC usage records, and the obligation to test coatings if the actual/allowable emissions ratio exceeds 75% provide a reasonable assurance of compliance with the limits and therefore satisfies the periodic monitoring requirement.

The initial Title V permit included a requirement to perform stack testing on the RTO serving a paint line if emissions from the paint line(s) exceeded 50% of the allowable emissions. The testing was to be performed within 180 days of determining such an exceedence or within five calendar years of the previous stack test, whichever occurred later. The requirement has been removed in the Title V renewal permit because, under the CAM Plans in the renewal permit, both RTOs are required to be tested at least once every five years (see CAM discussion below). The condition is therefore no longer needed.

There is no monitoring for the visible emissions requirement. Historically, there have been no visible emissions from the paint line RTOs. Operation of the painting operations is therefore not expected to result in visible emissions.

Compliance Assurance Monitoring (CAM)

O'Sullivan has two control devices that are subject to Compliance Assurance Monitoring (CAM), the requirements of which are found at 40 CFR 64. The RTO (RTO2) serving Paint Line 4 (PNT4) has been subject to CAM since the initial Title V permit issuance, because its post-control emissions of HAPs exceed major-source levels and O'Sullivan's Title V application was modified to add Paint Line 4 after April 20, 1998. The RTO (RTO1) serving Paint Lines 2 & 3 (and Laminator 3) is subject to CAM upon renewal of the Title V permit, because post-control VOC emissions from these units are at or above the major-source threshold of 100 tons per year. Because O'Sullivan's initial Title V application pertaining to Paint Lines 2 & 3 and Laminator 3 was complete before April 20, 1998, CAM did not apply to these units during the initial Title V permit term. According to 40 CFR 64.5(a)(3), CAM is applicable to these units upon renewal of the Title V permit.

The monitoring prescribed for the paint lines in O'Sullivan's minor NSR permit satisfies much of the CAM requirements. The CAM Plan for PNT4 (RTO2) remains largely unchanged in the renewed Title V permit. The only two changes made to the original CAM Plan are (1) the allowance for the stack testing required by 40 CFR 63 Subpart JJJJ (Paper and Other Web Coating MACT) to count for one of the periodic stack tests required by the CAM Plan, and (2) the allowance for changing the minimum RTO temperature requirement, if appropriate, as a result of the MACT-required stack test. The justification and rationale for the original RTO2 CAM Plan is appended as Attachment C.

O'Sullivan's renewal application included a proposed CAM Plan for the RTO serving Paint Lines 2 & 3 and Laminator 3. The proposed CAM Plan is patterned after the current CAM Plan for RTO2, with the following compliance indicators:

1) Combustion zone temperature of at least 1475 °F;

2) Periodic performance testing of RTO1 (initial test to be conducted near May 2006 and repeated at least once each permit term (i.e., every five years)); and

3) Capture efficiency monitoring for enclosures around each emissions unit (Paint Line 2 (PL2), Paint Line 3 (PL3), Paint Kitchen (PK), and Laminator 3 (LAM3)) and a monthly verification pressure drop values.

The minimum combustion zone temperature required in the minor NSR permit and as a CAM performance indicator (1475 °F) was based on the temperature in a previous stack test that demonstrated compliance with the 95.0% destruction efficiency requirement for the RTO. The test results, previously approved by and retained on file at VRO, establish the correlation between the required indicator range (combustion zone temperature greater than or equal to 1475°F) and compliance with the destruction efficiency requirement. In addition to stating the acceptable minimum combustion zone temperature, CAM incorporated into the permit specifies thermocouple measurement range and chart recorder sensitivity. Further, it elaborates on the data collection frequency and procedure, codifying O'Sullivan's current practice. CAM additionally requires an annual check of thermocouple accuracy.

Another provision of CAM for RTO1 is periodic stack testing. CAM included in the permit requires stack testing near May 2006 and at least once every permit term (i.e., every five years) thereafter.

An important aspect of the overall control scheme for Paint Lines 2 & 3 (PL2 & PL3), Laminator 3 (LAM3), and the Paint Kitchen (PK) is the capture efficiency achieved by the housing and ductwork surrounding each emission unit. The Paint Kitchen (PK) is required by the permit to be under permanent total enclosure (100% capture efficiency), while the other emissions units have various capture efficiency requirements (80% capture for Paint Lines 2 & 3 and 95% capture for Laminator 3). The CAM Plan, therefore, includes monitoring for capture efficiency, based on initial testing to be conducted in accordance with the Paper and Other Web Coating

MACT (see Condition X.D.4 of renewal permit) and ongoing monitoring of pressure drop sensors across each enclosure (or section of enclosure) and of fan motor auxiliary contacts and a monthly verification of pressure drop values. The details of the monitoring plan are to be developed by O'Sullivan in accordance with Condition X.B.6, which codifies the Paper and Other Web Coating MACT (40 CFR 63 Subpart JJJJ) requirement to develop a capture efficiency monitoring system for all subject coating lines (including the paint lines and laminators).

The combustion temperature monitoring, differential pressure monitoring, and periodic stack testing requirements included in the permit's CAM plan for RTO1 will provide an assurance of compliance with applicable requirements for Paint Lines 2 & 3 (PL2 & PL3), the Paint Kitchen (PK), and Laminator 3 (LAM3) and therefore satisfy the requirements of 40 CFR 64.

The table below summarizes the permit provisions that, according to 40 CFR 64, must be in the Title V permit:

Table 3. Permit conditions required by 40 CFR 64 (CAM)

40 CFR 64 reference	Requirement – What must be included in permit	O'Sullivan's permit provisions
64.6(c)1	Approved monitoring approach, including indicators to be monitored, indicator measurement methods, and performance criteria in 40 CFR 64.3	CAM Plans (permit Attachments A and B) specifies listed requirements
64.6(c)2	Means of defining excursions and associated averaging period	Excursion and averaging period are defined in Conditions IV.A.13, IV.A.14, and V.A.8.
64.6(c)3	The obligation to conduct Compliance Assurance Monitoring	Obligation is stated in Conditions IV.B.5 and V.B.5.
64.6(c)4	If appropriate, minimum data availability requirement	Condition IV.B.1 requires continuous temperature monitoring and recording; Each CAM Plan (permit Attachments A and B) specifies method of calculating three-hour average.

The permit also establishes thresholds (number of excursions from a performance indicator in a semi-annual period) after which O'Sullivan is required to develop a CAM Quality Improvement Plan (QIP) according to 40 CFR 64.8. The permit defines an excursion as any three-hour period of operation during which the average combustion zone temperature is outside the range specified in the incorporated CAM Plan or a monthly pressure verification result that is below the pressure level determined in initial testing.

Table 4 summarizes the reporting and recordkeeping provisions that, according to 40 CFR 64, must be included in the Title V permit.

Table 4. Reporting and recordkeeping required by 40 CFR 64 (CAM)

40 CFR 64 reference	Reporting or Recordkeeping Requirement	O'Sullivan's permit provisions
64.9(a)(2)(1)	Summary of number, duration, and cause of excursions and corrective actions taken	Requirement in Conditions IV.E.3 and V.E.2
64.9(a)(2)(ii)	Summary of number, duration, and cause of monitoring equipment downtime incidents, other than for routine calibration checks	Requirement in Conditions IV.E.3 and V.E.2
64.9(a)(2)(iii)	Description of actions taken to implement a QIP and, upon completion of QIP, documentation that QIP was completed and reduced the likelihood of excursions	Requirement in Conditions IV.E.3 and V.E.2
64.9(b)	Records of monitoring data, monitor performance data, corrective actions taken, written QIPs, actions taken to implement a QIP, and other supporting information	Requirement in Conditions IV.C.10 and V.C.10

CAM requirements for Paint Lines 2 & 3 (PL2 & PL3), Paint Kitchen (PK), and Laminator 3 (LAM3) have been summarized in a table and included as an attachment to the permit (Attachment B). The requirements have been incorporated into the permit by reference (in Condition IV.B.5 in the Painting Operations monitoring section and in Condition V.B.5 in the Laminating Operations section). The permit includes a condition stating O'Sullivan's obligation to conduct monitoring specified in the permit's CAM attachment. The Plan also defines what constitutes an excursion for each indicator and the threshold above which the number of excursions would require a Quality Improvement Plan (QIP). The permit also requires that records be kept of the monitoring required by the Plan and requires that reports of excursions, monitor downtime incidents and actions taken to implement a QIP be submitted semi-annually. The parametric monitoring, work practices, and periodic stack testing included in the permit's CAM plan will provide an assurance of compliance with applicable requirements for the emissions units and therefore satisfy the requirements of 40 CFR 64.

Other Recordkeeping

The permit includes requirements for maintaining records of all monitoring and testing required by Condition 27 of the 4/21/05 Minor NSR permit. These records include:

- Certified MSDS or VOC Data Sheet showing VOC content of each coating used
- RM24 or 24A test results, if the testing requirement is triggered by actual emissions
- the monthly and rolling annual throughput of each coating
- VOC recovered each month
- monthly and rolling annual emissions of VOC
- average combustion zone temperature of each RTO during actual painting operations
- notation of any three-hour periods during actual painting operations during which the average combustion zone temperature was below the required value
- strip chart showing continuous combustion zone temperature for RTO serving PL4
- all performance test results, including stack testing and testing to verify that enclosures meet the permanent total enclosure criteria enumerated in the permit.
- data required to show compliance with each CAM Plan (see Table 4)

Testing

As mandated by Condition 14 of the 4/21/05 Minor NSR Permit, the operating permit requires that the facility be constructed so as to allow for emissions testing and monitoring upon reasonable notice.

The permit requires periodic stack testing of each RTO using EPA Method 25 or 25A to confirm ongoing compliance.

A table of test methods has been included in the permit if testing other than that explicitly required in the permit is performed. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

As required by Condition 28 of the 4/21/05 Permit, the Title V permit includes quarterly reporting of periods in which the combustion zone temperature in either RTO is below the required value. O'Sullivan is also required to notify the Director, Valley Regional Office of proposed performance testing dates and provide a written protocol.

Reporting required by 40 CFR 64 (CAM) has also been included in the permit (see Table 4).

Streamlined Requirements

The 4/21/05 Minor NSR permit contains an opacity limit of five percent, which has been included in the Title V permit. The permit opacity limit is more stringent than the regulatory limit of 20% in 9 VAC 5-50-80. Accordingly, compliance with the permit limit ensures compliance with the regulatory limit, so the regulatory limit has not been included in the Title V permit.

LAMINATING OPERATIONS – Emission Unit ID #s LAM1, LAM2, LAM3, and LAM4

Limitations

The following limitations are State BACT requirements from the Minor NSR permit issued April 21, 2005. Requirements related to operation of the RTO are included in Painting Operation Limitations. Please note that the condition numbers are from the 4/21/05 Minor NSR permit, a copy of which is attached (Attachment B).

Conditions 3, stating VOC emissions from Laminator 1 (LAM1) shall be controlled by use of waterborne coatings only;

Condition 4, stating that VOC emissions from Laminator 3 (LAM3) shall be controlled by a 95% efficient capture system and an RTO;

Condition 16, stating that O'Sullivan shall regularly investigate the feasibility of using coatings having lower HAP content on Laminators 3 and 4 (LAM3 & LAM4);

Condition 22, limiting the VOC throughput to Laminator 1 (LAM1) to 9.8 tons per year;

Condition 24, limiting annual VOC emissions from Laminators 1, 3, and 4 to 9.8, 100, and 100 tons, respectively.

Condition 22, limiting annual VOC emissions from Laminators 3 and 4 (LAM3 and LAM4) to 100 tpy each.

The following section of the Virginia Administrative Code was found to be applicable to Laminator 2 (LAM2):

9 VAC 5-40-80, Standard for Visible Emissions

The following section is applicable to Laminator 3 (LAM3) and Laminator 4 (LAM4):

9 VAC 5-50-80, Standard for Visible Emissions, New and Modified Sources

O'Sullivan is located in Winchester, a VOC Control Area, and is therefore subject to applicable Reasonably Available Control Technology (RACT) standards in 9 VAC 5 Chapter 40 of the Virginia Administrative Code. The following requirements from 9 VAC 5 Chapter 40, Article 32 (Emission Standards for Vinyl Coating Application Systems (Rule 4-32)) are applicable to the laminators:

9 VAC 5-40-4480 A and B and 9 VAC 5-40-4490, limiting VOC emissions from any laminator to 3.8 lbs per gallon applied and listing control methods to achieve the emissions limit (e.g., use of waterborne or high-solids coatings, carbon adsorption, incineration, or other equivalent technology);

9 VAC 5-40-4540 C, specifying an alternative emission standard if the 3.8 lbs VOC/gal limit is not achieved through use of compliant coatings;

9 VAC 5-40-4540 B, clarifying that the emission standards apply either coating by coating or to the volume-weighted average of coatings where the coatings are used on a single laminator and the coatings are the same type or perform the same function (averaging not to exceed 24 hours); and

9 VAC 5-40-4480 C, requiring that reasonable precautions be taken to minimize the discharge of emissions from cleaning and purging operations and specifying methods of minimization.

The following requirement, derived from the federal Compliance Assurance Monitoring (CAM) Rule (40 CFR 64), establishes a threshold at which O'Sullivan is required to develop a Quality Improvement Plan for its RTOs:

> For Laminator 3 (LAM3), the permittee shall develop a Quality Improvement Plan (QIP) according to 40 CFR 64.8 if more than six excursions from the indicator range specified in the Compliance Assurance Monitoring (CAM) Plan (Attachment A) occur within a semi-annual period. An excursion shall be defined as any three-hour period of operation during which the average combustion zone temperature is outside of the indicator range specified in the CAM Plan. Semi-annual periods are as indicated by reporting requirements in Condition XV.C.3.

Monitoring

The monitoring requirements for the laminating operations in the 4/21/05 Minor NSR permit have been modified to meet Part 70 requirements (only Laminators 1, 3 and 4 (LAM1, LAM3 and LAM4) are covered by the permit). Please note that monitoring requirements related to the RTO have been included in the Painting Operations section.

For each laminator, the permittee will monitor and record on a monthly basis coating and adhesive usage, VOC of the coating or adhesive, and the number of hours of operation. Using these data, the permittee will calculate monthly and annual VOC throughput and emissions to demonstrate compliance with emission limitations. The permit provides formulas to be used in calculating emissions. For emissions from Laminator 3 (LAM3), emissions from which are treated by the RTO, the formula provided in the Painting Operations section will be used. To calculate uncontrolled emissions from Laminators 1, 2 and 4, the following equation will be used:

$$V_{EM} = V_{TPUT} - V_{REC} - V_{RET}$$

Where

V_{EM} = Annual emissions of VOCs in tons.

V_{TPUT} = Annual throughput of VOCs in tons.
V_{REC} = Annual amount of VOCs recovered or disposed of off-site in tons.
V_{RET} = Annual amount of VOCs retained in the products in tons

Annual emissions are to be calculated monthly as the sum of each consecutive 12-month period. The value for VOCs retained in product used in emission calculations must be approved by the Director, Valley Regional Office.

For the purposes of calculating VOC emissions, the permit requires a tiered approach to determining VOC content in coatings and adhesives. For the past several years, O'Sullivan has operated at levels well below (at less than 50% of) its emission limits. Because of the large margin of compliance, the permit allows the VOC content of coating or adhesive as supplied used in emission calculations to be based on manufacturer formulation data as shown on the Material Safety Data Sheet (MSDS) for each product. If a range of VOC content values is given, calculations shall be based on the maximum value. However, once the monthly calculation of actual emissions indicates emissions at 50% or more of the allowable annual emissions, quarterly testing of each product formulation is required. The testing shall be determined, by either the permittee or supplier, using EPA Reference Method 24 (40 CFR 60, Appendix A). Each coating and adhesive shipment must be identified by a product formulation number that may be correlated to Reference Method 24 results. Emission calculations must be based on the most recent test results for each formulation. The quarterly tests may be discontinued after actual annual emissions are below 50% of the allowable levels for three consecutive months. If quarterly testing is discontinued, the permit requires that the VOC content determined in the latest test for each formulation be used in lieu of MSDS information.

Compliance demonstration and monitoring requirements from Rule 4-32 have been included in the Title V renewal permit. Such provisions include how to show compliance with the 3.8 lbs VOC/gal or alternative emission standard (from 9 VAC 5-40-4540 B and AQP-2). Rule 4-32 and AQP-2 also provide formulas for calculations values needed to demonstrate compliance with Rule 4-32, all of which have been included in the Title V renewal permit. The following formula (from 9 VAC 5-40-4540 B and AQP-2) is given to calculate a coating formulation in terms of lbs VOC per gallon coating solids (lbs VOC/GCS):

$$F_{cs} = \frac{F_{clw}}{1 - F_{clw}/Dc}$$

Where:
F_{cs} = VOC content of the coating in lb VOC/GCS
F_{clw} = VOC content of the coating in lb VOC/GCLW
Dc = density of VOC used (lb VOC/gallon VOC) (note: use a volume-weighted average for multiple VOCs)

The same regulation provides a formula for calculating the required overall control efficiency for each laminator to meet the emission standard, as follows:

$$OE_{req} = \frac{F_{cs} - 7.9}{F_{cs}}$$

Where:
F_{cs} = VOC content of coating in lbs VOC/gal coating solids, as defined in Condition V.B.6
OE_{req} = overall control efficiency required (mass fraction)

The regulation also gives a formula for determining overall control efficiency where a control device is used, as follows:

$$OE = CE \times DRE$$

Where:
OE = overall control efficiency (mass fraction)
CE = collection efficiency of the capture device (lb VOC collected/lb VOC used)
DRE = destruction or removal efficiency of the add-on control device

There is no monitoring for the visible emissions requirement. Laminating operations at O'Sullivan have historically produced no visible emissions. Operation of the laminators is not expected to result in visible emissions.

The RTO serving Laminator 3 (LAM3) (RTO1) is subject to Compliance Assurance Monitoring (CAM) (40 CFR 64). Please see discussion of the RTO1 CAM Plan and associated requirements in the Painting Operations Monitoring section.

Recordkeeping

The permit includes requirements for maintaining records of all monitoring and testing required by the permit. Please note that recordkeeping requirements related to the RTO are included in the Painting Operations section. Records required to show compliance with laminator requirements include:

- Certified MSDS or VOC Data Sheet showing VOC content of each coating and adhesive used
- Reference Method 24 test results
- the monthly and rolling annual throughput of each coating and adhesive
- VOC retained in product and hazardous waste each month
- monthly and rolling annual emissions of VOC
- total hours that Laminator 3 (LAM3) vents to the atmosphere and total hours that it vents to the RTO (monthly and rolling 12-month)
- test results verifying 95.0% capture efficiency for Laminator 3 (LAM3)
- calculations of the volume-weighted average of coatings used, if applicable

- calculations showing the required overall control efficiency needed to achieve the lbs VOC/gal emission standard and calculations showing the overall control efficiency actually achieved for Laminator 3 (LAM3)

Testing

As mandated by Condition 14 of the 4/21/05 Minor NSR Permit, the operating permit requires that the facility be constructed so as to allow for emissions testing and monitoring upon reasonable notice. A table of test methods has been included in the permit if testing other than that explicitly required in the permit is performed. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

Condition 29 of the 4/21/05 Permit requires semi-annual reports of the results of studies of the feasibility of using lower-HAP materials in Laminators 3 and 4. The requirement has been included in the Title V renewal permit.

Streamlined Requirements

There are no streamlined requirements for laminating operations.

ROTOGRAVURE PRINTING OPERATIONS – Emission Unit ID LEMB (Lembo printer)

Limitations

The following limitations and requirements are derived from 40 CFR 63 Subpart KK (National Emission Standards for the Printing and Publishing Industry) as designated for product rotogravure printing.

- HAP emissions from the Lembo printer shall be limited to no more than four percent of the mass of inks, coatings, varnishes, adhesives, primers, solvents, reducers, thinners, and other materials applied for the month;

- If a different compliance option under 40 CFR 63 Subpart KK is chosen in the future, a permit modification may be required;

40 CFR 63 Subpart KK imposes limits on organic HAP emissions from rotogravure printing while offering a variety of compliance options for doing so. Product rotogravure facilities such as O'Sullivan may comply through use of capture and control equipment, the substitution of non-HAP solvents for HAP, or a combination of these methods. Ten options for demonstrating compliance are delineated in 40 CFR 63.825 for product rotogravure facilities. O'Sullivan has chosen to comply with 40 CFR 63 Subpart KK by limiting emissions to four percent of the mass of materials applied, as specified in 40 CFR 63.825(b)(4). It should be noted that O'Sullivan may in the future choose to comply with 40 CFR 63 Subpart KK through use of any option given in 40 CFR 63.825 (such a change would require a modification of the minor new source review and Title V permits).

O'Sullivan is located in Winchester, a VOC Control Area, and is therefore subject to applicable Reasonably Available Control Technology (RACT) standards in 9 VAC 5 Chapter 40 of the Virginia Administrative Code. The following requirements from 9 VAC 5 Chapter 40, Article 32 (Emission Standards for Vinyl Coating Application Systems (Rule 4-32)) are applicable to the Lembo printer (LEMB):

9 VAC 5-40-4480 A and B and 9 VAC 5-40-4490, limiting VOC emissions from the printer to 3.8 lbs per gallon applied and listing control methods to achieve the emissions limit (e.g., use of waterborne or high-solids coatings, carbon adsorption, incineration, or other equivalent technology);

9 VAC 5-40-4540 C, specifying an alternative emission standard if the 3.8 lbs VOC/gal limit is not achieved through use of compliant coatings;

9 VAC 5-40-4540 B, clarifying that the emission standards apply either coating by coating or to the volume-weighted average of coatings where the coatings are used on a single unit and the coatings are the same type or perform the same function (averaging not to exceed 24 hours); and

9 VAC 5-40-4480 C, requiring that reasonable precautions be taken to minimize the discharge of emissions from cleaning and purging operations and specifying methods of minimization.

The following sections of the Virginia Administrative Code were also determined to be applicable:

9 VAC 5-40-80 Standard for Visible Emissions

Monitoring

In accordance with 40 CFR 63 Subpart KK, the permit requires O'Sullivan to demonstrate compliance with the mass HAP percent limit by EPA Reference Method (RM) 311 testing, using the VOC content as determined by EPA RM 24 testing, or use Certified Product Data Sheet (CPDS) information. Also included in the permit is a formula from 40 CFR 63 Subpart KK to be used to calculate the monthly average as-applied organic HAP content of all materials used on the Lembo printer (LEMB), shown below.

$$H_L = \frac{\sum_{i=1}^{p} M_i C_{hi} + \sum_{j=1}^{q} M_j C_{hj}}{\sum_{i=1}^{p} M_i + \sum_{j=1}^{q} M_j}$$

Where

H_L = the monthly average as-applied organic HAP content of all solids-containing materials applied at less than 0.04 kg organic HAP per kg of material applied, in kg/kg

M_i = the mass of ink or other material, i, applied in a month, in kg

C_{hi} = the organic HAP content of ink or other solids-containing material, i, expressed as a weight-fraction, in kg/kg

C_{hj} = the organic HAP content of solvent, j, expressed as a weight-fraction, in kg/kg

M_j = the mass of solvent, thinner, reducer, diluent, or other non-solids containing material, j, applied in a month

40 CFR 63 Subpart KK also requires calculation of actual total HAP emissions from the rotogravure press each month, according to the following equation:

$$H = \sum_{i=1}^{p} M_i C_{hi} + \sum_{j=1}^{q} M_j C_{hj}$$

Where

H = the total monthly organic HAP applied, in kg

M_i = the mass of ink or other material, i, applied in a month, in kg
C_{hi} = the organic HAP content of ink or other solids-containing material, i, expressed as a weight-fraction, in kg/kg
C_{hj} = the organic HAP content of solvent, j, expressed as a weight-fraction, in kg/kg
M_j = the mass of solvent, thinner, reducer, diluent, or other non-solids containing material, j, applied in a month

The calculation assumes that the organic HAP emitted from the Lembo printer (LEMB) is equal to the organic HAP applied on the printer.

Compliance demonstration and monitoring requirements from Rule 4-32 have been included in the Title V renewal permit. Such provisions include how to show compliance with the 3.8 lbs VOC/gal or alternative emission standard (from 9 VAC 5-40-4540 B and AQP-2). Rule 4-32 and AQP-2 also provide formulas for calculations values needed to demonstrate compliance with Rule 4-32, all of which have been included in the Title V renewal permit. The following formula (from 9 VAC 5-40-4540 B and AQP-2) is given to calculate a coating formulation in terms of lbs VOC per gallon coating solids (lbs VOC/GCS):

$$F_{cs} = \frac{F_{clw}}{1 - F_{clw}/Dc}$$

Where:
F_{cs} = VOC content of the coating in lb VOC/GCS
F_{clw} = VOC content of the coating in lb VOC/GCLW
Dc = density of VOC used (lb VOC/gallon VOC) (note: use a volume-weighted average for multiple VOCs)

The permit requires O'Sullivan to inspect each Lembo printer (LEMB) stack weekly for visible emissions. If any visible emissions are present, a six-minute visible emissions evaluation (VEE) must be performed according to Method 9 (40 CFR Part 60, Appendix A). If during the six minutes any violations of the 20% opacity standard are noted, a one-hour VEE is required to demonstrate compliance with the standard. Timely corrective action is required if a violation is determined to have occurred. This will meet the periodic monitoring requirement for the visible emission limit included in the permit.

Recordkeeping

The permit includes requirements for maintaining records of all data needed to show compliance with the permit. These records include:

- Annual throughput of each material applied on the Lembo printer (LEMB), calculated monthly as the sum of each consecutive 12-month period;

- HAP content of each material applied

- HAP emissions from the Lembo printer (LEMB), calculated monthly as the sum of each consecutive 12-month period;

- Monthly average as-applied organic HAP content of all materials applied at the Lembo printer (LEMB);

- Calculations showing the volume-weighted average of coatings used, if applicable;

- Calculations showing the VOC content of coatings in lbs VOC per gallon coating solids, if applicable; and

- Results of weekly stack inspections.

Testing

The permit requires that the facility be constructed so as to allow for emissions testing at any time using appropriate methods, as required by 9 VAC 5-40-30. A table of test methods has been included in the permit if testing is performed. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

The permit delineates reporting requirements from 40 CFR 63 Subpart KK. O'Sullivan is required to submit a semi-annual summary report (40 CFR 63.10(e)(3)(vii) and (viii)).

CALENDERING OPERATIONS – Emission Unit ID #s CAL1 - CAL3, CALMIX1a-b, 2a-b, and 3a-b

Limitations

The following limitations are State BACT requirements from the Minor NSR permit issued December 22, 2004, for modification of Calender 2. Please note that the condition numbers are from the 12/22/04 permit, a copy of which is attached (Attachment D).

Condition 3, requiring that PM and VOC emissions from Calender 2 be controlled by a 90% efficient capture system and the O'Sullivan "stack-in-stack" system;

Condition 4, requiring that PM emissions from Calender 2 pre-blenders (CALMIX 2b1 and 2b2) be controlled by fabric filters;

Condition 5, requiring that PM emissions from the Calender 2 Banbury mixer (CALMIX 2a) be controlled by a fabric filter;

Condition 6, requiring that the "stack-in-stack" system for Calender 2 maintain a control efficiency for PM and VOC of 42.9%;

Condition 9, limiting throughput of raw materials to Calender 2 to 12,000 tons per year;

Condition 10, limiting PM and PM-10 emissions from Calender 2 pre-blenders (CALMIX 2b1 and 2b2) to 0.32 lbs/hr and 0.54 tons/yr;

Condition 11, limiting PM and PM-10 emissions from the Calender 2 Banbury mixer to 0.50 lbs/hr and 0.85 tons/yr;

Condition 12, limiting emissions from Calender 2 to 0.83 lbs/hr and 1.41 tons/yr PM/PM-10 and 4.13 lbs/hr and 7.06 tons/yr VOC;

Condition 13, limiting visible emissions from Calender 2 to 20% opacity, except for one six-minute period in which visible emissions shall not exceed 30% opacity;

Condition 14, limiting visible emissions from each fabric filter serving the Calender 2 pre-blenders to five percent opacity

The following limitations from the Virginia Administrative Code for existing sources of air pollution have been determined to be applicable.

9 VAC 5-40-80, limiting visible emissions from the calenders and calender mixing units (CAL1 – CAL3 and CALMIX1a,b – CALMIX3a,b) to 20% opacity, except for one six-minute period in any one hour in which visible emissions shall not exceed 60% opacity;

9 VAC 5-40-260 C, limiting PM emissions from each calender (CAL1 – CAL3) and each calender mixing unit (CALMIX1a,b – CALMIX3a,b) according to the following equation:

$$E = 4.10P^{0.67}$$

Where
E = emission rate in lbs/hr
P = process weight rate in tons/hr

A requirement to control PM emissions from the mixing units for Calenders 1 and 3 (CALMIX1a,b & CALMIX3a,b) using a fabric filter has been included. The facility currently controls the mixing units with baghouses; including the control requirement in the permit simplifies monitoring required to demonstrate compliance with the PM emission limit for those units. It should be noted that all mixing unit baghouses currently vent within the facility.

According to results of stack testing conducted in June 2005, Calender 2 (CAL2) is not in compliance with the hourly VOC and PM emission limits or the control efficiency requirement. A Consent Order dated January 10, 2006 specifies steps for O'Sullivan to take to return Calender 2 (CAL2) to compliant status. The renewal permit includes a compliance plan (Section XII) that is at least as stringent as the provisions of the Consent.

Monitoring

The monitoring requirements for Calender 2 (CAL2) in the 12/22/04 Minor NSR permit were developed to meet Part 70 requirements.

To monitor compliance with the visible emissions limit, the permit requires O'Sullivan to perform weekly inspections of the stacks of the calenders (CAL1 – CAL3). If visible emissions are seen from the calender stacks, an EPA Method 9 test shall be performed for at least six minutes. If any of the observations exceed the standard, the test shall continue until 60 minutes of observation have been completed. If the test indicates a violation, corrective action shall be taken. Because the calender mixing units (CALMIX1a,b – CALMIX3a,b) vent indoors, O'Sullivan is not required to monitor visible emissions until such time as they may be vented to the atmosphere. Actual PM emissions from the calenders have historically been very low (less than two tpy for all three combined) and there is no documentation in DEQ files of visible emissions violations from the units. The permit requires O'Sullivan to take timely corrective action if visible emissions are noted. Therefore the weekly stack inspections will provide a reasonable assurance of compliance with the opacity limit and therefore meets periodic monitoring standards.

The calender mixing units (CALMIX1a,b – CALMIX3a,b) upstream of each calender have a maximum capacity of at least 100 pounds (0.05 ton) per hour. Because the resin must be properly blended and mixed before it can be fed to the calenders, the mixing unit capacities effectively limit the input to each calender. Using as the calender mixing unit capacity 0.05 ton per hour as the feed rate to each calender, the allowable emission rate may be determined, based on the Process Weight Rate formula in the permit:

$$E = 4.10P^{0.67}$$

Where
E = emission rate in lbs/hr
P = process weight rate in tons/hr

so $E = 4.10\ (0.05)^{0.67}$
$= 0.551$ lb PM/hr allowed for each calender at 100 pounds/hr feed rate

Using the emission factors derived from the June 2005 stack testing of Calender 2 (CAL2) and a feed rate of 0.05 ton/hr to each calender yields maximum actual emissions, not including any control achieved by the stack-in-stack device, as follows:

(0.05 TPH) x (1.17 lbs PM/ton vinyl produced) = 0.058 lb PM/hr from each calendar

The calculations demonstrate that the maximum emissions of each calender is well below the allowable level. It is reasonably assumed that the emissions limit will not be exceeded at the maximum feed rate to the calender lines.

Recordkeeping

The permit requires O'Sullivan to maintain records necessary to demonstrate compliance. Recordkeeping requirements for Calender 2 from the 12/22/04 minor NSR permit have been included in the Title V renewal permit. Such records include annual throughput processed by the calenders and mixers, the annual hours of operation of each unit, and records of the weekly stack inspection results and any subsequent corrective action.

Testing

The permit requires that the facility be constructed so as to allow for emissions testing at any time using appropriate methods, as required by 9 VAC 5-40-30. The permit does not require source tests. A table of test methods has been included in the permit if testing is performed. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

MATERIALS HANDLING OPERATIONS – Emission Unit IDs RECONV1 and RESCONV2

Limitations

The following limitations from the Virginia Administrative Code for existing sources of air pollution have been determined to be applicable.

9 VAC 5-40-80, limiting visible emissions from the resin conveyor stacks (RESCONV1 and RESCONV2) to 20% opacity, except for one six-minute period in any one hour in which visible emissions shall not exceed 60% opacity;

9 VAC 5-40-260 C, limiting PM emissions from the resin conveyor stacks (RESCONV1 and RESCONV2) according to the following equation:

$$E = 4.10P^{0.67}$$

Where
E = emission rate in lbs/hr
P = process weight rate in tons/hr

Additionally, a requirement to control PM emissions from the resin conveyor stacks (RESCONV1 and RESCONV2) using a fabric filter has been included. The facility currently controls the mixing units with baghouses; including the control requirement in the permit simplifies monitoring required to demonstrate compliance with the PM emission limit for those units.

Monitoring

Based on the above formula and the maximum rated capacity of each resin conveyor (RESCONV1 and RESCONV2) of 10 TPH, the maximum allowable PM emission rate for each conveyor is

$$E = 4.10P^{0.67}$$
$$= (4.10) \text{ x } (10^{0.67})$$
$$= 19.2 \text{ lbs /hr}$$

A conservative engineering assumption made by O'Sullivan in its application is that one percent of the material conveyed becomes airborne and is transferred to the baghouse. At the maximum capacity of 10 TPH, 200 lbs PM would be delivered to the filter, which, if operating properly, may be assumed to be 99.9% efficient for resin dust. Controlled emissions at the maximum capacity of the conveyors would therefore be 0.2 lbs PM/hr, well below the allowable level. Therefore, periodic monitoring to ensure proper baghouse performance would provide a reasonable assurance of compliance with the hourly PM limit.

The permit requires O'Sullivan to perform weekly inspections of the resin conveyor stacks to assess the presence of visible emissions. If visible emissions are seen from either stack, O'Sullivan will determine the cause of the visible emissions and take corrective action until baghouse operation resumes with no visible emissions.

If a baghouse is operating properly, there should be no visible emissions from the unit. This is so because the device eliminates particulates, which are the source of the visible emissions. Therefore, if visible emissions are seen from a baghouse stack, it can be reasonably assumed that there is a problem with the control device.

Visible emissions have been selected as the indicator because they are indicative of good operation and maintenance of a baghouse. If the baghouse is not functioning properly, visible emissions will be present. Therefore, visible emissions are an acceptable performance indicator.

The weekly inspections satisfy the periodic monitoring requirement for particulate emissions from the resin conveyors.

Recordkeeping

The permit requires O'Sullivan to maintain records necessary to demonstrate compliance. Such records include annual throughput processed by the conveyors, the annual hours of operation of each unit, and records of the weekly stack inspection results and any subsequent correction.

Testing

The permit requires that the facility be constructed so as to allow for emissions testing at any time using appropriate methods, as required by 9 VAC 5-40-30. The permit does not require source tests. A table of test methods has been included in the permit if testing is performed. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

STORAGE TANK REQUIREMENTS – Emission Unit IDs TNK-0021 through TNK-0026 and TNK-0061 through TNK-0066

Limitations

O'Sullivan is located in Winchester, a VOC Control Area, and is therefore subject to applicable Reasonably Available Control Technology (RACT) standards in 9 VAC 5 Chapter 40 of the Virginia Administrative Code. The following requirements from 9 VAC 5 Chapter 40, Article 25 (Emission Standards for Volatile Organic Compound Storage and Transfer Operations (Rule 4-25)) are applicable to the storage tanks:

9 VAC 5-40-3430 A, requiring control of at least 60% by weight VOC emissions during tank filling, and

9 VAC 5-40-3440 A.1, requiring that each storage tank be equipped with a submerged fill pipe.

The requirements apply only to tanks storing a VOC having a vapor pressure equal to or greater than 1.5 pounds per square inch absolute under actual storage or filling conditions. In the initial Title V permit, the storage tanks were subject to recordkeeping requirements from 40 CFR 60 Subpart Kb, Standards of Performance for Volatile Organic Liquid Storage Vessels for which Construction, Reconstruction, or Modification Commenced after July 23, 1984. However, Subpart Kb was amended October 15, 2003, such that the recordkeeping requirements for tanks of the size of O'Sullivan's (less than 75 m^3 (19,817 gallons) in capacity) were removed. Accordingly, the Subpart Kb recordkeeping requirements have been removed from the draft Title V renewal permit.

Monitoring and Recordkeeping

Compliance demonstration and monitoring requirements from Rule 4-25 have been included in the Title V renewal permit. Such provisions include requirements to keep a list identifying each VOC stored in each storage tank and the VOC's vapor pressure under absolute actual filling and storage conditions and to maintain on file certification of submerged fill pipe for each storage tank storing a VOC having a vapor pressure equal to or greater than 1.5 pounds per square inch absolute under actual storage or filling conditions.

HAZARDOUS AIR POLLUTANTS FROM PAPER AND OTHER WEB COATING – Emission unit IDs PL2 2 – 4, LAM1 –LAM4, and PEMB

The following limitations and requirements are derived from 40 CFR 63 Subpart JJJJ (National Emission Standards for Hazardous Air Pollutants from Paper and Other Web Coating), which defines the "affected source" as the collection of all web coating lines at the facility. The Lembo printer (LEMB), although a web coating line, is not subject to Subpart JJJJ according to 40 CFR 63.3300(b) because it is already subject to 40 CFR 63 Subpart KK (NESHAP for Printing and Publishing). For O'SULLIVAN, therefore, the affected source is the group consisting of the paint lines (PL2 – PL4), the laminators (LAM1 – LAM4), and the post embosser (PEMB).

Limitations

The Title V renewal permit includes the following limitations and requirements, as they are applicable requirements in 40 CFR 63 Subpart JJJJ:

- Organic HAP emissions shall be limited to four percent of the mass of coating materials applied each month
- Operational requirements applicable to any add-on control equipment used to meet the emission standard, including the requirement to operate a thermal oxidizer at at least the three-hour average temperature established during performance testing and the requirement to develop a monitoring plan to track capture efficiency
- a requirement to develop, implement, and maintain a startup, shutdown and malfunction (SSM) plan

40 CFR 63 Subpart JJJJ imposes limits on organic HAP emissions from web coating operations while offering a variety of compliance options for doing so. Web coating operations such as those at O'Sullivan may comply through use of capture and control equipment, the substitution of non-HAP solvents for HAP, or a combination of these methods. O'Sullivan has chosen to comply with 40 CFR 63 Subpart JJJJ by limiting emissions to four percent of the mass of materials applied, as specified in 40 CFR 63.3320(b)(2). It should be noted that O'Sullivan may in the future choose to comply with 40 CFR 63 Subpart JJJJ through use of any option given in 40 CFR 63.3320 (such a change would require a modification of the Title V permit).

Monitoring

40 CFR 63 Subpart JJJJ specifies monitoring requirements to facilitate proper operation and performance of any control equipment used to meet the emission standard. Such requirements include:

- data collection and reduction criteria
- a requirement to operate a thermal oxidizer at or above the temperature limit established in testing
- temperature monitoring device and recorder performance criteria
- quality assurance criteria for each continuous parameter monitoring system (CPMS)
- developing and implementing a plan to monitor capture efficiency
- developing and implementing a CPMS quality control program

40 CFR 63 Subpart JJJJ specifies formulas to be used to monitor compliance with the emission standard. One such formula is for calculating the overall organic HAP control efficiency each month for each coating line routed to an oxidizer:

$$R = \frac{(E)(CE)}{100}$$

Where:
R = Overall organic HAP control efficiency, percent
E = Organic volatile matter control efficiency of the control device, percent
CE = Organic volatile matter capture efficiency of the capture system, percent

Organic HAP emissions for each month from each coating line controlled by the RTO are to be calculated as follows:

$$H_e = (1-R)\left(\sum_{i=1}^{p} C_{ahi} M_i\right) - M_{vret}$$

Where:
H_e = Total monthly organic HAP emitted, lbs
R = Overall organic HAP control efficiency, percent
p = Number of different coating materials applied in a month
C_{ahi} = Monthly average, as-applied, organic HAP content of coating material, i, expressed as a mass fraction, lb/lb
M_i = Mass of as-purchased coating material, i, applied in a month, lbs
M_{vret} = Mass of volatile matter retained in the coated web after curing or drying, or otherwise not emitted to the atmosphere, lbs. The value of this term will be zero in all cases except where the permittee chooses to take into account the volatile matter retained in the coated web or otherwise not emitted to the atmosphere for compliance demonstration.

40 CFR 63 Subpart JJJJ also specifies a formula to be used to calculate organic HAP emissions from each uncontrolled coating line:

$$H_m = \sum_{i=1}^{p} C_{hi} M_i + \sum_{j=1}^{q} C_{hij} M_{ij} - M_{vret}$$

Where:
H_m = Total monthly organic HAP applied, lbs
p = Number of different coating materials applied in a month
C_{hi} = Organic HAP content of coating material, i, as-purchased, expressed as a mass fraction, lb/lb
M_i = Mass of as-purchased coating material, i, applied in a month, lbs
q = Number of different materials added to the coating material
C_{hij} = Organic HAP content of material, j, added to as-purchased coating material, i, expressed as a mass fraction, lb/lb
M_{ij} = Mass of material, j, added to as-purchased coating material, i, in a month, kg
M_{vret} = Mass of volatile matter retained in the coated web after curing or drying, or otherwise not emitted to the atmosphere, lbs. The value of this term will be zero in all cases except where you choose to take into account the volatile matter retained in the coated web or otherwise not emitted to the atmosphere for the compliance demonstration

Subpart JJJJ further states that total organic HAP emissions for each month are to be determined by summing the organic HAP emissions determined, according to the above formulas, for each controlled and uncontrolled web coating line. Then, the permittee is required to determine the organic HAP emission rate based on coating material applied (for direct comparison to the emission standard) by using the following formula:

$$S = \frac{H_{et}}{\sum_{i=1}^{p} M_i + \sum_{j=1}^{q} M_{ij}}$$

Where:
S = Mass of organic HAP emitted per mass of material applied, lb/lb
H_{et} = Total monthly organic HAP emitted, lbs, as calculated according to Condition X.B.10
p = Number of different coating materials applied in a month
M_i = Mass of as-purchased coating material, i, applied in a month, lbs
q = Number of different materials added to the coating material
M_{ij} = Mass of material, j, added to as purchased coating material, i, in a month, lbs

40 CFR 63 Subpart JJJJ states that a source shall be considered to be in compliance with the emission standard for the month if all operating parameters required to be monitored were maintained at (or above, for temperature) the values established during performance testing and the total mass of organic HAP emitted by the web coating lines is no more than 0.04 lb organic HAP per lb coating applied.

Recordkeeping

The recordkeeping requirements from 40 CFR 63 Subpart JJJJ have been incorporated into the O'Sullivan Title V renewal permit. Such records include:

- capture system parameter monitoring
- CPMS data
- the occurrence and duration of each SSM of a web coating line or control equipment
- all required maintenance performed on air pollution control or monitoring devices
- actions taken during SSM periods that are inconsistent with those mandated by the SSM plan
- data necessary to demonstrate conformance with the SSM plan when actions taken during SSM periods are consistent with those specified in the plan
- each period during which a CPMS is malfunctioning or inoperative
- all required measurements needed to demonstrate compliance with 40 CFR 63 Subpart JJJJ
- control device and capture system operating parameter data
- overall control efficiency determination using capture efficiency and control device destruction efficiency
- organic HAP content data for each material used
- volatile matter and coating solids content data, if applicable
- material usage and organic HAP usage for the affected source

Testing

In accordance with 40 CFR 63 Subpart JJJJ, the permit requires O'Sullivan to demonstrate the organic HAP mass fraction of each coating material, as purchased, by EPA Reference Method (RM) 311 testing, using the VOC content as determined by EPA RM 24 testing, or use formulation data from the manufacturer. Also included in the permit is a formula from 40 CFR 63 Subpart JJJJ to be used to calculate the monthly average as-applied organic HAP content of all materials used on the web coating lines (if solvents are added to as-purchased materials before application), shown below.

$$C_{ahi} = \frac{C_{hi}M_i + \sum_{j=1}^{q} C_{hij}M_{ij}}{M_i + \sum_{j=1}^{q} M_{ij}}$$

Where:
C_{ahi} = Monthly average, as-applied, organic HAP content of coating material, i, expressed as a mass fraction, lb/lb
C_{hi} = Organic HAP content of coating material, i, as-purchased, expressed as a mass fraction, lb/lb

M_i = Mass of as-purchased coating material, i, applied in a month, lb
q = Number of different materials added to the coating material
C_{hij} = Organic HAP content of material, j, added to as-purchased coating material, i, expressed as a mass fraction, lb/lb
M_{ij} = Mass of material, j, added to as-purchased coating material, i, in a month, lb
M_i = Mass of as-purchased coating material, i, applied in a month, lb

Formulas are also provided for calculating the as-applied volatile organic content and the as-applied solids content of a coating, if applicable.

The permit also includes the Subpart JJJJ requirement to conduct performance testing within 180 days of December 5, 2005 (the MACT compliance date) and to use the test to establish the minimum combustion temperature (as a three-hour average) needed to achieve the desired destruction efficiency. The MACT and permit also require capture efficiency testing for each web coating line within 180 days of December 5, 2005. Finally, the permit includes the requirement to develop a test protocol and conduct testing to determine the mass of volatile matter retained in the web substrate, if such retention is considered in showing compliance with the emission standard.

Reporting

The permit includes all reporting requirements from 40 CFR 63 Subpart JJJJ, including those incorporated into Subpart JJJJ from the Part 63 General Provisions (40 CFR 63 Subpart A). The reporting requirements include:

- semi-annual compliance report
- notification of date of required performance test, at least 60 days in advance
- Notification of Compliance Status report, within 60 days of performance testing
- periodic (semi-annual) SSM reporting
- immediate SSM reporting (of actions in response to SSM that are inconsistent with the approved SSM plan), within seven days of occurrence

HAZARDOUS AIR POLLUTANTS FROM ORGANIC LIQUIDS DISTRIBUTION (Facility-wide)

O'Sullivan's facility includes equipment meeting the definition of affected source under 40 CFR 63 Subpart EEEE (National Emission Standards for Hazardous Air Pollutants from Organic Liquids Distribution) (OLD MACT), which was promulgated February 3, 2004. According to 40 CFR 63.2338(b), the affected source is the collection of activities and equipment used to distribute organic liquids into, out of, or within the facility and is composed of: storage tanks storing organic liquids, transfer racks at which organic liquids are loaded into or unloaded out of transport vehicles or containers, equipment leak components in organic liquid service associated with pipelines (except as provided in 40 CFR 63.2338(c)(2)), storage tanks, and transfer racks, and transport vehicles while loading or unloading organic liquids at transfer racks. The OLD

MACT requirements have an effective date of February 3, 2007. However, based on the vapor pressure of the organic liquids stored in O'Sullivan's storage tanks and on the fact that O'Sullivan loads organic liquids only from trucks into storage tanks (and not from the tanks into trucks), there are no requirements from the MACT that apply to the units, except the Initial Notification Requirement (40 CFR 63.7545) and the obligation to submit periodic compliance reports (40 CFR 63.2386). In a letter dated December 13, 2004, O'Sullivan provided the initial notification for applicability of the OLD MACT and requested an applicability determination on several detailed aspects of the rule. In response to O'Sullivan's letter, DEQ developed a preliminary applicability determination and forwarded its determination to EPA Region III for its concurrence (see letter from Sharon G. Foley to Helene Drago, February 9, 2005), given the potential national implications of a MACT determination and the fact that O'Sullivan has other facilities outside of Virginia. In a letter dated November 10, 2005, EPA Region III concurred with DEQ's applicability determination. Attachment E includes the correspondence from O'Sullivan, DEQ, and EPA Region III relating to the OLD MACT applicability determination.

On November 14, 2005, EPA proposed amendments to the OLD MACT, including changes to the definitions of organic liquid loading volume and transfer rack, changes to storage tank and transfer rack control requirements, and changes to notification, recordkeeping, and reporting requirements. In a letter dated January 27, 2006, O'Sullivan reviewed the proposed rule changes and found that its operations would not trigger any of the revised control or work practice standards. DEQ concurs with O'Sullivan's determination. The draft Title V renewal permit includes the compliance reporting requirement from the promulgated rule, as the proposed rule is not yet effective and it is not clear when it may take effect.

A condition has been added to the Title V renewal permit that indicates that the units are subject to the regulation. However, under O'Sullivan's current operating conditions, there are no requirements (other than initial notification, already fulfilled, and periodic compliance reports) that apply to the units.

COMPLIANCE PLAN

Provisions have been added to the draft Title V renewal permit that are at least as stringent as the requirements in the January 10, 2006 Consent Order between DEQ and O'Sullivan Films, Inc. The consent order was developed following stack testing of Calender 2 (CAL2) that indicated exceedence of the hourly VOC and PM limits and noncompliance with the control efficiency requirement for the unit. The consent order (and the Title V renewal permit's compliance plan) requires O'Sullivan to perform stack testing again, the results of which, when combined with operating and production data, will be used to develop more accurate emission factors for the process. The emission factors will in turn be used as the basis for amending the short-term emission limits in the minor NSR permit (and Title V permit).

The Compliance Plan section of the draft Title V renewal permit includes terms that are at least as stringent as the requirements from Appendix A of the 1/10/06 Consent Order as well as

reporting requirements. Reporting requirements include: (1) written confirmation of achievement of each milestone in the consent order, within 14 days of completing the milestone (or, if applicable, an explanation of why the milestone was not achieved by the required date, within 14 days of the date), and (2) a semi-annual certified progress report.

A copy of the Consent Order is appended (Attachment F).

GENERAL CONDITIONS

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110, that apply to all Federal operating permit sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions, including those caused by upsets, within one business day. The General Conditions section has been updated to reflect changes in the Title V permit template since the original permit issuance.

STATE-ONLY ENFORCEABLE REQUIREMENTS

O'Sullivan's original Title V permit included minor NSR permit limits that were derived from Virginia's Toxics Rule (9 VAC 5 Chapter 60, Article 5, formerly 9 VAC 5-50-180 *et seq*.). Conditions based on Virginia's Toxics Rule have since been removed from the minor NSR permit. Since promulgation of the Paper and Other Web Coating MACT (40 CFR 63 Subpart JJJJ), the Toxics Rule no longer applies to the paint lines and laminators. Accordingly, they are no longer applicable requirements and have been removed from the Title V renewal draft permit.

FUTURE-APPLICABLE REQUIREMENTS

None identified.

INAPPLICABLE REQUIREMENTS

The following regulations were identified by the permittee as inapplicable:

- 40 CFR 60 Subpart Dc (Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units): O'Sullivan's boilers were installed prior to June 9, 1989, and are therefore not subject to the standard. Also, the standard does not apply to process heaters, so the Calender 3 hot oil generator is not subject to it.
- 40 CFR 60 Subpart FFF (Standards of Performance for Flexible Vinyl and Urethane Coating and Printing): Applies to rotogravure printing operations installed, modified, or reconstructed after January 18, 1983; O'Sullivan's rotogravure press was installed

before the effective date and has not been modified or reconstructed so as to trigger applicability.

- 40 CFR 60 Subpart Kb (Standards of Performance for Volatile Organic Liquid Storage Vessels): Applies to VOC storage tanks having capacities greater than or equal to 19,812.9 gallons; O'Sullivan's tanks are below the applicability threshold.
- 9 VAC 5 Chapter 40, Part II, Article 36 (Emission Standards for Flexographic, Packaging Rotogravure, and Publication Rotogravure Printing Lines (Rule 4-36)): O'Sullivan's rotogravure press (Lembo printer) is neither a packaging nor a publication rotogravure unit, so is not subject to Rule 4-36.

INSIGNIFICANT EMISSION UNITS

The insignificant emission units are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

Two units that were included as insignificant units in the initial Title V permit, Laminator 1 (LAM1) and the post embosser (PEMB1) have been removed from the list in the draft Title V renewal permit. Laminator 1 (LAM1) was modified such that its uncontrolled emissions exceed the insignificant unit threshold and the post embosser (PEMB1) is part of the affected source under the Paper and Other Web Coating MACT. Therefore, neither unit qualifies as an insignificant unit in the draft Title V renewal permit.

Insignificant emission units include the following:

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted (5-80-720 B)	Rated Capacity (5-80-720 C)
PHTR4	Natural-gas-fired burner, Lembo oven	9 VAC 5-80-720 C		2.4 MMBtu/hr
PHTR5	Natural-gas-fired burner, Laminator 3 oven	9 VAC 5-80-720 C		1.2 MMBtu/hr
PHTR6 – 9	(4) natural-gas-fired burners, Paint Line 3 oven Zones 1 – 4	9 VAC 5-80-720 C		2 MMBtu/hr each
PHTR10	Natural-gas-fired burner, Paint Line 3 oven preheat	9 VAC 5-80-720 C		0.8 MMBtu/hr
PHTR11-14	(4) natural-gas-fired burners, Paint Line 2 oven Zones 1 – 4	9 VAC 5-80-720 C		2 MMBtu/hr each
PHTR15	Natural-gas-fired burner, Paint Line 1 dryer	9 VAC 5-80-720 C		0.8 MMBtu/hr
GEN21	Diesel emergency generator Bldg 2	9 VAC 5-80-720 C		375 HP (engine), 200 kW (generator)

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted (5-80-720 B)	Rated Capacity (5-80-720 C)
GEN22	Diesel emergency generator Bldg 14A	9 VAC 5-80-720 C		375 HP (engine), 200 kW (generator)
GEN23	Diesel emergency generator Bldg 54	9 VAC 5-80-720 C		375 HP (engine), 200 kW (generator)
PUMP24	Diesel fire control system water pump	9 VAC 5-80-720 C		267 HP (engine)
ICENG1	Gas IC engine powered equipment (portable cement mixer, 2 portable welders, saw, port. generator, etc.)	9 VAC 5-80-720 C		~ < 20 HP
CLNR1-4	(5) parts cleaners	9 VAC 5-80-720 B	VOC, HAPs	
HWC1	Hazardous waste compactor	9 VAC 5-80-720 B	VOC, HAPs	
TNK-P1	Bulk storage tank, plasticizer	9 VAC 5-80-720 B	VOC, HAPs	10,000 gal
TNK-P2	Bulk storage tank, plasticizer	9 VAC 5-80-720 B	VOC, HAPs	10,000 gal
TNK-P3	Bulk storage tank, plasticizer	9 VAC 5-80-720 B	VOC, HAPs	11,732 gal
TNK-P4N	Bulk storage tank, plasticizer	9 VAC 5-80-720 B	VOC, HAPs	7614 gal
TNK-P4S	Bulk storage tank, plasticizer	9 VAC 5-80-720 B	VOC, HAPs	7614 gal
TNK-P5	Bulk storage tank, plasticizer	9 VAC 5-80-720 B	VOC, HAPs	14,500 gal
TNK-P8	Bulk storage tank, plasticizer	9 VAC 5-80-720 B	VOC, HAPs	7500 gal
TNK-P9	Bulk storage tank, plasticizer	9 VAC 5-80-720 B	VOC, HAPs	9964 gal
TNK-G13a	Bulk storage tank, solvent	9 VAC 5-80-720 B	VOC, HAPs	250 gal
TNK-G13b	Bulk storage tank, solvent	9 VAC 5-80-720 B	VOC, HAPs	250 gal
TNK-TC14	Bulk storage tank, solvent	9 VAC 5-80-720 B	VOC, HAPs	8000 gal
TNK-TC15	Bulk storage tank, solvent	9 VAC 5-80-720 B	VOC, HAPs	8000 gal
TNK-P16	Bulk storage tank, plasticizer	9 VAC 5-80-720 B	VOC, HAPs	8000 gal
TNK-P17	Bulk storage tank, plasticizer	9 VAC 5-80-720 B	VOC, HAPs	8000 gal
TNK-TC18	Bulk storage tank, solvent	9 VAC 5-80-720 B	VOC, HAPs	10,000 gal
TNK-TC19	Bulk storage tank, solvent	9 VAC 5-80-720 B	VOC, HAPs	10,000 gal
TNK-P30	Storage tank, plasticizer	9 VAC 5-80-720 B	VOC, HAPs	275 gal
TNK-S31	Storage tank, plasticizer	9 VAC 5-80-720 B	VOC, HAPs	8000 gal

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted (5-80-720 B)	Rated Capacity (5-80-720 C)
TNK-S32	Storage tank, stabilizer	9 VAC 5-80-720 B	VOC, HAPs	8000 gal
TNK-HO41a	Storage tank, hot oil expansion	9 VAC 5-80-720 C	VOC, HAPs	275 gal
TNK-HO41b	Storage tank, kerosene	9 VAC 5-80-720 B	VOC, HAPs	275 gal
TNK-FO27	Storage tank, diesel fuel	9 VAC 5-80-720 B	VOC, HAPs	275 gal
TNK-FO28	Storage tank, diesel fuel	9 VAC 5-80-720 B	VOC, HAPs	275 gal
TNK-FO29	Storage tank, diesel fuel	9 VAC 5-80-720 B	VOC, HAPs	275 gal
TNK-FO1	Storage tank, fuel oil	9 VAC 5-80-720 B	VOC, HAPs	14,100 gal
TNK-FO2	Storage tank, fuel oil	9 VAC 5-80-720 B	VOC, HAPs	14,933 gal
TNK-FO3	Storage tank, fuel oil	9 VAC 5-80-720 B	VOC, HAPs	19,108 gal
TNK-FO4	Storage tank, fuel oil	9 VAC 5-80-720 B	VOC, HAPs	19,391 gal
TNK-FO40	Storage tank, diesel fuel	9 VAC 5-80-720 B	VOC, HAPs	275 gal
TNK-FO60	Storage tank, diesel fuel	9 VAC 5-80-720 B	VOC, HAPs	250 gal
TNK-V43	Storage tank, Varsol	9 VAC 5-80-720 B	VOC, HAPs	275 gal
VAC1	Large portable vacuum cleaners	9 VAC 5-80-720 B	PM, PM-10, HAPs	N/A
CROTRT1	Corona treaters, laminators	9 VAC 5-80-720 B	Ozone (as VOC)	See emission unit
CROTRT2	Corona treaters, paint lines	9 VAC 5-80-720 B	Ozone (as VOC)	See emission unit
CROTRT3	Corona treaters, post embosser	9 VAC 5-80-720 B	Ozone (as VOC)	See emission unit
CROTRT4	Corona treaters, calenders	9 VAC 5-80-720 B	Ozone (as VOC)	See emission unit
RCYCL1	Vinyl recycling systems	9 VAC 5-80-720 B	PM, PM-10	N/A
R & D –001	Research and Development building (R & D is not the primary function of the facility but rather serves as a support function)	9 VAC 5-80-720 A	N/A	N/A

[1]The citation criteria for insignificant activities are as follows:

9 VAC 5-80-720 A - Listed Insignificant Activity, Not Included in Permit Application
9 VAC 5-80-720 B - Insignificant due to emission levels
9 VAC 5-80-720 C - Insignificant due to size or production rate

These emission units are presumed to be in compliance with all requirements of the federal Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping, or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

CONFIDENTIAL INFORMATION

The permittee requested confidentiality for the capacity value of certain pieces of equipment, the capacity values of which had been refined since the initial Title V permit. O'Sullivan submitted both a confidential copy and a public copy of its application, accompanied by a showing justifying confidential treatment of the application. The capacity values of the applicable pieces of equipment, except for the calenders, have been removed from Section II (emission units table) of the Title V renewal permit. For most of the calender units, the capacity values are shown as "≥100 pounds/hr", as this is the applicability threshold of an applicable rule.

PUBLIC PARTICIPATION

A public notice for the draft permit was published in the Winchester Star newspaper on May 5, 2006. The public comment period ended 30 days later on June 4, 2006. The draft and supporting documentation were available for public review during the public comment period. No comments were received from the public.

Concurrently with the public notice, the proposed permit was provided to U.S. EPA Region III for its review and comment. EPA's 45-day review period began May 5, 2006 and ended June 18, 2006. EPA provided no comments on the proposed permit.

ATTACHMENTS

A: 2004 annual emissions report
B: Minor NSR permit dated April 21, 2005
C: RTO2 CAM Plan justification/rationale (from SLFB for initial Title V permit)
D: Minor NSR permit dated December 22, 2004
E: Correspondence related to OLD MACT applicability determination
F: Consent Order dated January 10, 2006